

THE MINERAL INDUSTRY OF

ITALY

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Italy's gross domestic product, adjusted for inflation, grew at a rate of 0.7% in 1996, down from the 2.9% rate of 1995 (International Monetary Fund, 1998), as the Italian government continued to exercise budget austerity and to reduce its role in the economy through privatization of its assets (U.S. Department of State, Washington, DC, unpub. data accessed January 13, 1998, on the World Wide Web at URL http://www.state.gov/www/about_state/business/com_guides/1997/europe_canada/italy97.html). Its gross domestic product, in current dollars, reached \$1.21 trillion in 1996 compared with \$1.09 trillion in 1995 (International Monetary Fund, 1998).¹ Inflation declined to 3.9% from 5.3% in 1995 (International Monetary Fund, 1998). Italy has been a significant processor of imported raw materials as well as a significant consumer and exporter of mineral and metal semimanufactured and finished products. It was the world's largest producer of pumice and related materials, producing almost one-half of the world's output, as well as the world's largest feldspar producer, producing about 25% of the world's output. The country was the world's eighth and ninth largest producer of crude steel and cement, respectively. Italy was also an important producer of dimension stone and marble.

Growth in Italy's mining and extractive industries was minimal. (See table 1.) Among the metallic ores, lead was mined, although production was static. Most of the output comes from the Silius mines in Sardinia. The small output of zinc ore comes from the safety and environmental recovery work in the remaining sites in the Iglesias area of Sardinia (Marzocchi, 1997). Industrial mineral production remained the most important sector with overall output remaining more or less constant. Domestic production of natural gas remained static while that of petroleum continued to increase. Although Italy has significant trade in mineral commodities, with European Union (EU) countries and the rest of the world, it is principally a net importer of mineral commodities. (See table 2.)

Alumina in Italy was produced only by Eurallumina S.p.A., at Portoscuso in Sardinia. The company was owned jointly by Alumix S.p.A. (52.1%) and by Australian interests. Almost all alumina in Italy was produced from imported bauxite, most of which was obtained from Australia and Guinea.

Alumix S.p.A., part of the state holding company Eute Fiere Italiane Atacchine, was the only primary aluminum producer in

Italy. As part of the government's privatization efforts, the Aluminum Company of America (Alcoa) acquired the principal operating assets of Alumix in March (Aluminum Company of America, 1997). The assets Alcoa purchased included two primary smelters, at Portovesme and Fusina, with a combined annual capacity of 170,000 metric ton per year (t/yr). (See table 3.) Other assets acquired in the transaction were a rolling mill with a capacity of 140,000 t/yr at Fusina; four aluminum extrusion plants, at Bolzano, Fossanova, Feltre, and Iglesias with a combined capacity of 70,000 t/yr; an extrusion die shop at Mori; a network of six metal distribution centers in Italy; three administrative centers; and sales offices in France, Germany, Spain, and the United Kingdom (Aluminum Company of America, Pittsburgh, PA, unpub. data accessed February 4, 1998, on the World Wide Web at URL <http://www.shareholder.com/alcoa/news/>). Details on output and/or capacity were not readily available on Italy's several secondary aluminum producers.

Italian refined copper production has averaged about 90,000 t/yr between 1992 and 1996. Enirisorse S.p.A., the largest producer of refined copper in Italy, was estimated to have produced about one-half of Italy's copper output. There are no copper mines in Italy and little imports of ore; imported scrap, ashes, slag, and other residues are the major sources of the copper produced in Italy.

Sardinia Gold Mining S.p.A., a joint venture 70% owned by Gold Mines of Sardinia and 30% owned by Progemisa S.p.A., began construction of a plant to recover gold and copper at its Furtei exploration project, north of Cagliari. Initial production will be from oxidized ores to be followed by production from underlying sulfide mineralization. Some 1,400 kilograms of gold are expected to be recovered from the oxidized ores and an additional 700 kg of gold and 2,500 metric tons of copper in concentrates from the sulfide ores during the first 41 months of operations. Further exploration at Furtei and the surrounding area will be conducted in an attempt to enlarge the reserves (Mining Magazine, 1996).

Italy imports most of its supplies of lead and zinc concentrates, with Canada being the largest single source for these commodities. (See table 5.) Within Italy, most lead and zinc concentrate production came from Enirisorse's mines in Sardinia. Enirisorse's lead and zinc smelters were also in Sardinia, and the zinc electrolytic plant was near Venice. The Porto Vesme smelter in Sardinia produced primary lead and zinc metal and cadmium, while the San Gavino complex, near Porto Vesme, produced refined lead and byproducts, such as bismuth, gold, and silver.

¹Where necessary, values have been converted from Italian lira (L) to U.S. dollars at a rate of L1,542.9=US\$1.00 for 1996 and L1,628.9=US\$1.00 for 1995.

Italy was the second largest producer of crude steel in the EU. Germany is the largest producer. About 40% of steel in Italy was produced by basic oxygen furnaces and 60% was produced by electric arc furnaces. In Italy, all of the steel was produced by private companies following the completion of a privatization program by the Government between 1992 and 1996 (Scruffier, 1997). All iron ore was imported in 1996, of which 50% came from Brazil, 19% from Mauritania, and 8% from Australia. (*See table 5.*) The country's steel industry also imported about 5 million tons of scrap, mostly from Austria, France, and Germany.

Iilva S.p.A., the Government holding company, sold its 84% share of Dalmine S.p.A. to Techint Finanziaria S.p.A. of Italy and Siderca SAIC of Argentina. Dalmine is a major manufacturer of steel pipe. With this sale, the Government has completed privatization of its steel holdings. Since 1992, some nine companies have been sold for a total of about \$4.4 billion of which the Dalmine sale accounted for about \$190 million (Metal Bulletin, 1996; American Metal Market, 1996).

Italy was the second largest cement producer of the EU, following Germany. Italcementi-Fabbriche Riunite Cemento S.p.A. was the largest of Italy's 52 cement producers (*see table 3*), with about 40% of the Italian market. Cement consumption, production and imports, by quantity, were down in 1996. Exports, however, were up (International Bulk Journal, 1997). (*See tables 4 and 5.*) Italy was a net exporter of cement. (*See table 3.*)

Most of Italy's bentonite mining took place on the island of Sardinia, with processing plants on the mainland. More than one-half of the country's bentonite production comes from Industria Chimica Carlo Laviosa S.p.A. The company's main mining activity was in the Pedra de Fogu and Puntenuova areas of Sardinia. Production from these areas fed the processing plants at Oristano in Sardinia and at Livorno, south of Pisa. Montmorillonite clay (white bentonite) was quarried at S'Aliderru in northwestern Sardinia. Caffaro S.p.A., operating in Sardinia, was Italy's only producer of acid-activated montmorillonite. The clay was shipped to the company's plant at Porto Marghera near Venice. Several small bentonite producers operated on the mainland, at Foggia in the district of Puglia and at Pietracuta di S. Leo in the Pesaro District.

Italy was the world's leading producer of feldspar and feldspathic minerals. These materials are important constituents of ceramic tile. Italy accounted for 30% of world tile output and more than 50% of the total tile produced in the EU. There were more than 350 small companies producing tiles, employing about 30,000 workers. Major sources for clay imports in 1996, in declining order of importance, were the United Kingdom, Germany, and the United States.

Italian marble occurs in many localities, from the Alps to Sicily, and is quarried at hundreds of operations. The most important geographic area for producing white marble is in the Apuan Alps in Tuscany, particularly near the town of Carrara. The Lazio region, Lombardy, the Po Valley, Puglia, the Island of Sicily, and Venice are important colored-marble-producing areas. About one-half of production is in block form. About one-half of the total production is exported. Other major

marble-producing areas include the Valle di Susa, near Turin in the northwestern Italian Alps; the valley of the Po River in Lombardy; the Verona-Vicenza area of Venice; and the vicinity of Benevento, northeast of Naples in southern Italy. Resources are considered to be unlimited.

Production of potash continued remained suspended in 1996. The main reasons were the result of a severe drought that has restricted the availability of process water to the plants and the inability to remove waste material and mine water owing to environmental and ecological concerns. The three underground mines that were previously operating in Sicily, at Pasquasia, Racalmuto, and Realmonte, remained on standby.

Italy was the world's leading producer of pumice and pozzolan. The Mediterranean Island of Lipari, 40 kilometers off the northern coast of Sicily, was the center of the Italian pumice industry, where two companies, Pumex S.p.A and Italpomice S.p.A., quarried pumice for world markets. Pumex, with about a 650,000 t/yr capacity, was Italy's largest pumice producer. The company quarried the Mount Pelato deposit on Lipari. Italpomice produced pumice at Acqualcalda on Lipari, with an output of about 70,000 t/yr.

Talco e Grafite Val Chisone S.p.A. operated two underground talc mines at Pinerolo near Turin. The white talc, mined from metamorphic rocks, has been of very high quality. Talco owned a 10% interest in an open pit mine at Orani, Sardinia, with the other 90% belonging to the Sardinian Mining Board. Talco Sarda S.p.A. also operated a mine at Orani. Talco e Grafite Val Chisone S.p.A. operated an underground mine at Fontane, and Industria Mineraria Italiana S.p.A. operated mines at Largone and Predaccia in Val Malenco, northern Italy.

Italy is heavily dependent on imported coal. In 1996 most imports were from Russia, South Africa, United States, and China, in declining order of importance. Lignite coal is produced by Ente Nazionale per L'Energia Elettrica (ENEL). Extraction problems and environmental reasons caused a further reduction in output from ENEL's Santa Barbara mine in Tuscany (Marzocchi, 1997), Italy's only lignite mine.

Geothermal energy was produced in the Larderello, Monte Amiata, and Travale areas in Tuscany. Exploration using geologic, geostructural, and seismic techniques has been actively pursued in these areas along with research for power stations exploiting geothermal energy.

There were more than 100 natural gas fields in operation, of which 70% were located offshore. About 35% of Italy's natural gas demand was met from domestic production. Algeria supplies more than 25% of Italy's natural gas needs through a 1,070-km-long natural gas pipeline from Algeria to Mazzara del Vallo in Sicily. Former Soviet Union countries supply about 25% of the country's natural gas through a pipeline across Austria and the Czech Republic.

Although domestic production of crude oil has been growing at a rate of 5.38% per year between 1992 and 1996 (*see table 1*), Italy continued to be almost totally dependent on imported crude oil for its needs. Some 75 million tons of crude oil was imported in 1996 with Libya, Iran, and Saudia Arabia, in declining order of importance, the major sources.

A total of 20,085 km of railroad track was operational in

1995. Highways totaled 294,410 km. Superhighways totaled 5,900 km, and 7,010 km of Italy's roads were unpaved, mostly in the southern half of the country. There were 1,203 km of crude oil pipelines in service, 2,143 km of refined product pipelines, and 13,740 km of gas pipelines.

Public and private spending on environmental controls is expected to grow, particularly in the areas of water-treatment, transportation equipment and services, urban and industrial waste disposal, remediation of soil contamination, and control of emissions.

Mining of metallic ores is expected to remain at its reduced levels because of ore depletion. The metals-processing industry, based primarily on imported stocks, is expected to continue to play an important role in Italy's economy. Italy is expected to remain a large producer of crude steel and a significant producer of secondary aluminum and refined copper, lead, and zinc in the EU.

The industrial minerals quarrying industry and preparation plants are expected to remain significant, especially in the production of barite, cement, clays, fluor spar, marble, and talc. Italy is expected to continue to be the world's leading producer of feldspar, feldspathic minerals, and pumice. The ceramics

sector is expected to be important, particularly regarding exports.

Domestic output of natural gas, crude petroleum, and petroleum refinery products is expected to grow, although Italy will continue to depend on imported coal, gas, and petroleum for most of its needs.

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TABLE 1
ITALY: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

| Commodity | 1992 | 1993 | 1994 | 1995 | 1996 e/ | |
|---|---------------|------------|------------|---------------|------------|-----------|
| METALS | | | | | | |
| Aluminum: | | | | | | |
| Bauxite, gross weight | 97,500 | 90,100 | 23,400 | 11,200 r/ | -- | |
| Alumina, calcined basis | 498,300 r/ | 549,100 r/ | 556,928 r/ | 857,000 r/ | 881,000 2/ | |
| Metal: | | | | | | |
| Primary | 160,700 r/ | 155,700 r/ | 175,631 | 197,750 r/ | 184,500 | |
| Secondary | 353,100 | 346,100 | 375,500 r/ | 412,300 r/ | 415,000 | |
| Antimony, oxides, gross weight 3/ | 1,170 | 942 | 900 | 757 r/ | 800 | |
| Bismuth metal | 20 | 15 | 5 | 5 e/ | 5 | |
| Cadmium metal, smelter | 742 | 517 | 475 | 308 | 400 | |
| Copper, metal, refined, all kinds | 76,000 | 90,300 | 84,000 | 98,000 r/ e/ | 100,000 | |
| Iron and steel, metal: | | | | | | |
| Pig iron | thousand tons | 10,462 | 11,066 | 11,157 | 11,684 | 10,427 2/ |
| Ferrous alloys: | | | | | | |
| Blast furnace, silicon pig iron e/ | 500 | 500 | 500 | -- r/ | -- | |
| Electric furnace: | | | | | | |
| Ferrochromium | 60,315 | 53,504 | 22,650 | 51,017 r/ | 29,915 2/ | |
| Ferromanganese | 17,079 | 17,000 | 16,000 | 20,216 r/ | 25,143 2/ | |
| Ferrosilicon | 12,000 | 3,350 | -- | -- | 11,741 2/ | |
| Silicomanganese e/ | 50,000 | 50,000 | 50,000 | 103,961 r/ 2/ | 100,353 2/ | |
| Silicon metal | 10,000 | -- | -- | 15,006 r/ | 14,240 2/ | |
| Other e/ | 12,000 | 12,000 | 10,000 | 10,000 | 10,000 | |
| Total e/ | 161,894 | 136,354 | 99,150 | 200,200 r/ | 191,392 | |
| Steel, crude | thousand tons | 24,904 | 25,701 | 26,114 | 27,766 | 23,922 2/ |
| Semimanufactures | do. | 23,331 | 21,760 | 22,775 | 22,000 e/ | 23,048 2/ |
| Lead: | | | | | | |
| Mine output, Pb content | 21,596 | 7,404 r/ | 13,902 r/ | 13,000 r/ e/ | 13,800 2/ | |
| Metal, refined: | | | | | | |
| Primary | 102,000 | 89,900 | 108,500 r/ | 84,900 r/ e/ | 47,200 | |
| Secondary | 84,300 | 92,900 | 95,100 r/ | 95,500 r/ e/ | 96,000 | |
| Total | 186,300 | 182,800 | 203,600 r/ | 180,400 r/ e/ | 143,200 | |
| Magnesium, metal, primary | 1,210 | -- | -- | -- | -- | |
| Manganese, mine output: | | | | | | |
| Gross weight | 8,346 | 8,198 r/ | 8,200 r/ | 6,548 r/ | 5,829 2/ | |
| Mn content | 2,087 | 2,075 | 1,868 | 1,625 r/ | 1,450 2/ | |
| Silver metal | kilograms | 12,880 r/ | 9,340 r/ | 12,080 r/ | 13,900 r/ | 12,000 |
| Zinc: | | | | | | |
| Mine output, Zn content | 35,032 | 5,600 r/ | 22,906 | 24,500 r/ | 11,000 | |
| Metal, primary | 252,600 | 253,600 | 255,900 r/ | 267,600 r/ | 260,000 | |
| INDUSTRIAL MINERALS | | | | | | |
| Barite | 74,900 | 52,697 | 57,856 | 44,000 r/ e/ | 80,463 2/ | |
| Bromine e/ | 300 | 300 | 300 | 300 | 300 | |
| Cement, hydraulic | thousand tons | 41,300 | 42,000 | 33,192 | 35,000 e/ | 34,000 |
| Clays, crude: | | | | | | |
| Bentonite | do. | 150 | 327 | 386 | 591 r/ | 475 |
| Refractory excluding kaolinitic earth | do. | 400 e/ | 434 | 619 | 730 e/ | 784 2/ |
| Fuller's earth | do. | 28 | 20 | 24 | 34 r/ | 26 2/ |
| Kaolin | do. | 33 | 76 | 74 | 88 | 120 |
| Kaolinitic earth | do. | 15 | 15 | 7 | 10 e/ | 9 |
| Diatomite e/ | 26,000 | 25,000 | 25,000 | 25,000 | 25,000 | |
| Feldspar | thousand tons | 1,388 | 1,534 | 1,807 | 2,199 r/ | 2,310 2/ |
| Fluorspar: | | | | | | |
| Acid-grade | 55,000 | 58,000 r/ | 52,630 | 91,529 r/ | 103,527 2/ | |
| Metallurgical-grade | 25,000 | 25,000 | 15,312 | 33,140 r/ | 23,000 | |
| Total | 80,000 | 83,000 r/ | 67,942 | 124,669 r/ | 126,527 | |
| Gypsum | thousand tons | 835 | 1,200 | 1,361 | 2,362 r/ | 2,000 |
| Lime, hydrated, hydraulic and quicklime e/ | do. | 3,600 | 3,600 | 3,500 | 3,500 | 3,500 |
| Nitrogen, N content of ammonia | do. | 1,100 | 729 | 504 | 500 e/ | 500 |
| Perlite e/ | 65,000 | 65,000 | 65,000 | 60,000 | 60,000 | |
| Pigments, mineral, iron oxides, natural e/ | 700 | 700 | 600 | 600 | 500 | |
| Potash, crude salts: | | | | | | |
| Gross weight | thousand tons | 940 | 200 | -- | -- | -- |
| K ₂ O equivalent | do. | 126 | 24 | -- | -- | -- |
| Marketable product, K ₂ O equivalent | do. | 86 | 20 | -- | -- | -- |

See footnotes at end of table.

TABLE 1--Continued
ITALY: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

| Commodity | 1992 | 1993 | 1994 | 1995 | 1996 e/ |
|---|----------|------------|------------|------------|------------|
| INDUSTRIAL MINERALS--Continued | | | | | |
| Pumice and related materials: e/ | | | | | |
| Pumice and pumiceous lapilli do. | 600 | 700 | 700 | 650 r/ | 600 |
| Pozzolan do. | 4,500 | 4,500 | 4,500 | 4,000 r/ | 4,000 |
| Pyrite, all types, gross weight do. | 441 | 377 r/ | 258 r/ | -- r/ | -- |
| Salt: | | | | | |
| Marine, crude e/ 4/ do. | 610 | 580 | 600 | 600 | 700 |
| Rock and brine do. | 3,366 r/ | 3,150 | 3,353 r/ | 2,952 r/ | 3,000 |
| Sand and gravel: e/ | | | | | |
| Volcanic sand do. | 100 | 100 | 100 | 100 | 100 |
| Silica sand do. | 4,000 | 3,100 r/ | 2,700 r/ | 3,000 r/ | 2,950 |
| Other sand and gravel | 125,000 | 100,000 r/ | 100,000 r/ | 87,000 r/ | 90,000 |
| Sodium compounds: e/ | | | | | |
| Soda ash thousand tons | 1,057 r/ | 1,056 r/ | 1,050 r/ | 1,070 r/ | 1,100 |
| Sodium sulfate do. | 125 | 125 | 125 | 125 | 125 |
| Stone: e/ | | | | | |
| Dimension: 5/ | | | | | |
| Calcareous: | | | | | |
| Alabaster do. | 20 | 20 | 25 | 25 | 25 |
| Marble in blocks: | | | | | |
| White do. | 100 r/ | 110 r/ | 110 r/ | 100 r/ | 103 2/ |
| Colored do. | 2,000 | 2,900 | 3,000 | 3,000 | 3,000 |
| Travertine do. | 1,000 | 1,000 | 1,000 | 2,000 r/ | 2,610 2/ |
| Other: | | | | | |
| Granite do. | 1,500 | 1,000 | 1,000 | 1,000 | 67 2/ |
| Sandstone do. | 1,800 | 1,800 | 1,800 | 1,800 | 180 |
| Slate do. | 120 | 120 | 120 | 120 | 107 |
| Crushed and broken: | | | | | |
| Dolomite do. | 700 | 700 | 700 | 700 | 700 |
| Limestone do. | 125,000 | 120,000 | 120,000 | 120,000 | 120,000 |
| Marl for cement do. | 14,100 | 14,000 | 12,000 | 14,000 | 14,000 |
| Serpentine do. | 1,500 | 1,500 | 1,500 | 1,400 | 1,662 2/ |
| Quartz and quartzite do. | 250 | 250 | 250 | 250 | 29 2/ |
| Sulfur, recovered as elemental and in compounds: | | | | | |
| S content of pyrite do. | 174 | 145 | 108 r/ | -- r/ | -- |
| Byproduct, oil refining and other sources e/ do. | 280 | 300 | 300 | 300 | 300 |
| Total e/ do. | 454 | 445 | 408 r/ | 300 r/ | 300 |
| Talc and related materials | 183,530 | 142,000 | 139,200 | 136,000 r/ | 168,000 2/ |
| MINERAL FUELS AND RELATED MATERIALS | | | | | |
| Asphalt and bituminous rock, natural | 36,000 | 38,000 | 36,000 | 31,620 r/ | 29,646 2/ |
| Carbon black e/ | 140,000 | 130,000 | 130,000 | -- r/ | -- |
| Coal: | | | | | |
| Lignite thousand tons | 1,140 | 1,053 | 517 r/ | 352 r/ | 223 2/ |
| Subbituminous (Sulcis coal) | 109,000 | 17,000 r/ | -- | -- | 4,787 2/ |
| Coke, metallurgical thousand tons | 5,350 | 5,000 | 5,000 | 5,000 e/ | 4,960 2/ |
| Gas, natural million cubic meters | 18,150 | 19,427 | 20,506 | 20,383 r/ | 20,218 2/ |
| Natural gas liquids e/ thousand 42-gallon barrels | 400 | 400 | 400 | 400 | 400 |
| Petroleum: | | | | | |
| Crude thousand 42-gallon barrels | 30,000 | 31,462 r/ | 33,212 r/ | 35,466 r/ | 36,994 2/ |
| Refinery products: | | | | | |
| Liquefied petroleum gas do. | 29,963 | 25,543 | 26,622 | 25,926 r/ | 25,114 2/ |
| Gasoline do. | 163,531 | 161,823 | 160,251 | 160,000 e/ | 160,000 |
| Naphtha e/ do. | 16,000 | 16,000 | 16,000 | 16,000 | 16,000 |
| Jet fuel e/ do. | 22,214 | 22,206 | 23,007 | 24,000 | 24,000 |
| Kerosene e/ do. | 34,092 | 34,038 | 34,929 | 35,000 | 35,000 |
| Distillate fuel oil do. | 220,000 | 218,000 | 220,000 | 220,000 e/ | 220,000 |
| Residual fuel oil do. | 157,043 | 154,112 | 138,781 | 140,000 e/ | 140,000 |
| Other e/ do. | 35,000 | 35,000 | 35,000 | 35,000 | 35,000 |
| Refinery fuel and losses e/ do. | 38,000 | 39,000 | 38,000 | 38,000 | 38,000 |
| Total e/ do. | 715,843 | 705,722 | 692,590 | 693,926 | 693,114 |

e/ Estimated. r/ Revised.

1/ Table includes data available through Mar. 1997.

2/ Reported figure.

3/ Antimony content is 83% of gross weight.

4/ Does not include production from Sardinia and Sicily estimated at 200,000 tons annually.

5/ Output of limestone and serpentine for dimension stone is included with "Stone: Crushed and broken." In addition to the commodities listed, a variety of other dimension stone was produced and previously listed, but available general information was inadequate for continued reliable estimation of output levels.

TABLE 2
ITALY: BALANCE OF PAYMENTS, SELECTED MINERAL COMMODITIES IN 1996 1/

(Thousand dollars)

| Commodity | Exports to EU | Imports from EU | Net gain or (loss) | Exports to the world | Imports from the world | Net gain or (loss) |
|--|---------------|-----------------|--------------------|----------------------|------------------------|--------------------|
| Industrial minerals: | | | | | | |
| Crude: | | | | | | |
| Clays, kaolin | 1,338 | 71,065 | (69,727) | 2,892 | 119,881 | (116,989) |
| Feldspar | 2,282 | 4,744 | (2,462) | 3,361 | 27,247 | (23,886) |
| Fluorspar | 1 | 2,103 | (2,102) | 174 | 12,791 | (12,617) |
| Marble | 43,076 | 34,614 | 8,462 | 187,419 | 74,391 | 113,028 |
| Talc | 13,055 | 14,462 | (1,407) | 17,272 | 18,610 | (1,338) |
| Vermiculite, perlite, chlorite | 1,173 | 857 | 316 | 1,414 | 4,057 | (2,643) |
| Other | 164,815 | 380,447 | (215,632) | 290,352 | 919,989 | (629,637) |
| Total | 225,740 | 508,292 | (282,552) | 502,884 | 1,176,966 | (674,082) |
| Cement, portland | 42,277 | 63,161 | (20,884) | 98,393 | 81,436 | 16,957 |
| Stone, building | 806,920 | 23,559 | 783,361 | 2,017,328 | 47,104 | 1,970,224 |
| Metals: | | | | | | |
| Aluminum: | | | | | | |
| Ore and concentrate | 368 | 1,600 | (1,232) | 1,317 | 87,553 | (86,236) |
| Oxides and hydroxides | 2,236 | 84,173 | (81,937) | 83,267 | 109,921 | (26,654) |
| Metal including alloys: | | | | | | |
| Unwrought | 51,487 | 549,893 | (498,406) | 64,174 | 865,960 | (801,786) |
| Semimanufactures | 771,571 | 853,411 | (81,840) | 1,200,900 | 1,084,603 | 116,297 |
| Total | 823,058 | 1,403,304 | (580,246) | 1,265,074 | 1,950,563 | (685,489) |
| Copper: | | | | | | |
| Ore and concentrate | 1 | 20 | (19) | 14 | 62 | (48) |
| Matte and speiss including cement copper | 1,824 | 33 | 1,791 | 1,875 | 33 | 1,842 |
| Metal including alloys: | | | | | | |
| Scrap | 60,328 | 323,296 | (262,968) | 63,085 | 381,733 | (318,648) |
| Unwrought | 34,892 | 335,109 | (300,217) | 48,331 | 1,188,499 | (1,140,168) |
| Semimanufactures | 642,459 | 925,406 | (282,947) | 845,249 | 1,000,011 | (154,762) |
| Total | 737,679 | 1,583,811 | (846,132) | 956,665 | 2,570,243 | (1,613,578) |
| Iron and steel: | | | | | | |
| Ore and concentrate | 312 | 2,789 | (2,477) | 520 | 454,949 | (454,429) |
| Metal excluding scrap | 4,476,529 | 5,704,439 | (1,227,910) | 7,638,440 | 7,863,729 | (225,289) |
| Lead: | | | | | | |
| Ore and concentrate | 1,432 | 12,663 | (11,231) | 4,685 | 41,126 | (36,441) |
| Oxides | 799 | 1,751 | (952) | 6,169 | 1,803 | 4,366 |
| Metal including alloys: | | | | | | |
| Scrap | 406 | 2,613 | (2,207) | 414 | 4,656 | (4,242) |
| Unwrought | 11,358 | 47,815 | (36,457) | 14,315 | 92,711 | (78,396) |
| Semimanufactures | 710 | 5,199 | (4,489) | 1,058 | 5,481 | (4,423) |
| Total | 12,474 | 55,627 | (43,153) | 15,787 | 102,848 | (87,061) |
| Zinc: | | | | | | |
| Ore and concentrate | 119 | 21,188 | (21,069) | 659 | 131,779 | (131,120) |
| Oxides | 12,148 | 12,130 | 18 | 12,821 | 18,043 | (5,222) |
| Blue powder | 1,161 | 12,197 | (11,036) | 1,495 | 12,544 | (11,049) |
| Metal including alloys: | | | | | | |
| Scrap | 1,151 | 14,786 | (13,635) | 7,247 | 16,072 | (8,825) |
| Unwrought | 70,820 | 92,752 | (21,932) | 88,531 | 142,108 | (53,577) |
| Semimanufactures | 2,756 | 12,514 | (9,758) | 1,351 | 12,748 | (11,397) |
| Total | 74,727 | 120,052 | (45,325) | 97,129 | 170,928 | (73,799) |
| Other nonferrous metals | 130,110 | 417,723 | (287,613) | 183,615 | 860,302 | (676,687) |
| Total, metals | 6,274,665 | 9,430,711 | (3,156,046) | 10,269,012 | 13,921,477 | (3,652,465) |
| Mineral fuels | 813,627 | 1,875,769 | (1,062,142) | 3,086,562 | 17,406,188 | (14,319,626) |

1/ Table prepared by Glenn J. Wallace, International Data Unit.

TABLE 3
 ITALY: STRUCTURE OF THE MINERAL INDUSTRY IN 1996
 (Thousand metric tons unless otherwise specified)

| Commodity | Major operating companies and major equity owners | Location of main facilities | Annual capacity |
|------------------|--|--|-----------------|
| Alumina | Eurallumina S.p.A. (Alumix S.p.A. 52.1%; Comalco 26.9% and Clarendon 21%, both Australian companies) | Plants at Portoscuso, Sardinia, and Porto Marghera, near Venice | 900 |
| Aluminum | Alcoa Italia S.p.A. | Smelters at Portovesme, Sardinia and Fusina near Venice | 170 |
| Asbestos | Amiantifera di Balangero S.p.A. | Mine at Balangero, near Turin | 100 |
| Barite | Bariosarda S.p.A. (Ente Mineraria Sarda) | Mines at Barega and Mont 'Ega, in Sardinia | 100 |
| Do. | Edem S.p.A. (Government) | Mines at Val di Castello, in Lucca | 20 |
| Do. | Edemsarda S.p.A. (Soc. Imprese Industriali) | Mines at Su Benatzu, Sto Stefano, and Peppixeddu, in Sardinia | 20 |
| Do. | Mineraria Baritina S.p.A. | Mines at Marigolek, Monte Elto, and Primaluna, near Milan | 20 |
| Bauxite | Sardabauxiti S.p.A. (Government) | Mine at Olmedo, Sardinia | 350 |
| Cement | 52 companies, of which the largest are: | | |
| Do. | Italcementi-Fabbriche Riunite Cemento S.p.A. | 19 plants, of which the largest are Calusco, Monselice, and Collefero | 6,003 |
| Do. | Cementerie del Tirreno S.p.A. (Cementir) | Plants at Arquasta Scivia, Livorno, Maddaloni, Napoli, Spoleto, and Taranto | 6,250 |
| Do. | Unicem S.p.A. | Plants at Guidonia, Lugagnano, Morano, Piacenza, S'Arcangelo di Romagna, and Settimello | 4,630 |
| Copper, refined | Enirisorse S.p.A. (Government) | Refineries at Porto Marghera and Pieve Vergonte | 46 |
| Do. | Europa Metalli—LMI S.p.A. | Refineries at Campo Tizzoro, Fornaci di Barga, and Villa Carcina | 26 |
| Do. | Chimet S.p.A. | Refinery at Arezzo | 13 |
| Feldspar | At least 5 companies, of which the largest are: | | 1,500 |
| Do. | Maffei S.p.A. | Surface mines at Pinzolo, Sondalo, and Campiglia Marittima; underground mine at Vipiteno | 200 |
| Do. | Miniera di Fragne S.p.A. | Surface mine at Alagna Valsesia | 300 |
| Do. | Sabbie Silicee Fossanova S.p.A. (Sasifo) | Surface mine at Fossanova | 60 |
| Do. | | | 30 |
| Gold | Gold Mines of Sardinia 70%, Government 30% | Furtei Mine at Osilo, Sardinia | 1,400 1/ |
| Lead-zinc, ore | Enirisorse S.p.A. (Government) | Mines at Masua, Monteponi and Sardinia | 60 |
| Lead, metal | do. | Refinery at San Gavino, Sardinia | 80 |
| Do. | do. | Kivcet smelter and Imperial smelter at Porto Vesme, in Sardinia | 114 |
| Lignite | Ente Nazionale per L'Energia Electrica (ENEL) | Surface mines at Pietrafitta and Santa Barbara | 1,500 |
| Magnesium, metal | Societa Italiana Magnesio S.p.A. (INDEL) | Plant at Bolzano | 8 |
| Marble | A number of companies including: | | 2,000 |
| Do. | Mineraria Marittima Srl | Quarries in the Carrara and Massa areas | 500 |
| Do. | Industria dei Marmi Vicentini S.p.A. | Quarries in the Carrara area | 300 |
| Do. | Figaia S.p.A. | do. | 100 |
| Petroleum: | | | |
| Crude | Ente Nazionale/Idrocarburi (ENI) Government | Offshore Sicily in the Adriatic Sea; onshore in Po River Valley | 90 |
| Refined | do. | About 30 refineries | 2,000 2/ |
| Potash, ore | Industria Sali Otassici e Affini per Aziono S.p.A. | Underground mines at Corvillo, Pasquasia, Racalmuto, and San Cataldo, in Sicily | 1,300 |
| Do. | Sta Italiana Sali Alcalini S.p.A. (Italkali) | Underground mines at Casteltermini and Pasquasia, in Sicily | 700 |
| Pumice | Pumex S.p.A. | Quarries on the Lipari Island, north of Sicily | 650 |
| Do. | Sta Siciliana per l'Industria ed il Commercio della Pomice di Lipari S.p.A. (Italpomice) | do. | 200 |
| Pyrite | Nuova Solmine S.p.A. | Underground mines at Campiano and Niccioleta | 900 |
| Salt, rock | Sta Italiana Sali Alcalini S.p.A. (Italkali) | Underground mines at Petralia, Racalmunto, and Realmonte, in Sicily | 4,000 |
| Do. | Solvay S.p.A. | Underground mines at Buriano, Ponteginori, and Querceto in Tuscany | 2,000 |
| Steel, crude | Ilva Laminati Piani S.p.A. (Riva Group 57.1%, other 42.9%) | 11 plants at Taranto | 11,500 |
| Do. | Riva Group | Various locations | 10,500 |
| Do. | Other | do. | 8,000 |
| Talc | Talco e Grafite Val Chisone S.p.A. | Mines at Pinerolo, near Turin; Orani, Sardinia; and Fontane, Val Malenco | 120 |
| Do. | Industria Mineraria Italiana S.p.A. | Mines at Largone and Predaccia, Val Malenco | 20 |
| Do. | Talco Sarda S.p.A. | Mine at Orani, Sardinia | 20 |
| Zinc, metal | Enirisorse (Government) | Plants at Crotone and Porto Vesme, in Sardinia, and Porto Marghera | 349 |

1/ Kilograms.

2/ Thousand 42-gallon barrels per day.

TABLE 4
ITALY: EXPORTS OF SELECTED MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

| Commodity | Total | Destinations | |
|--|------------------|---------------|--|
| | | United States | Other (principal) |
| METALS | | | |
| Aluminum: | | | |
| Ore and concentrate | 17,508 | -- | France 11,354; Slovenia 224. |
| Oxides and hydroxides | 410,798 | -- | Slovakia 305,965; Ukraine 33,000; Russia 21,260. |
| Metal including alloys: | | | |
| Scrap | 11,800 | 4 | Germany 5,322; France 2,872; Hungary 1,001. |
| Unwrought | 39,362 | (2/) | Germany 24,261; France 4,162; Turkey 3,734. |
| Semimanufactures | 300,861 | 12,566 | Germany 77,566; France 43,067; United Kingdom 16,130. |
| Beryllium, metal including alloys, all forms | value, thousands | \$132 | -- Japan \$82; Republic of Korea \$8; France \$6. |
| Cadmium, metal including alloys, all forms | 221 | -- | Belgium-Luxembourg 118; Netherlands 83; United Kingdom 17. |
| Chromium: | | | |
| Ore and concentrate | 2,330 | -- | Austria 426; Slovenia 355; France 346. |
| Metal including alloys, all forms | 51 | -- | Australia 24; Syria 20; Egypt 6. |
| Cobalt: | | | |
| Oxides and hydroxides | 30 | -- | Spain 13; Slovenia 7; United Kingdom 3. |
| Metal including alloys, all forms | 76 | -- | United Kingdom 25; Belgium-Luxembourg 17; Denmark 7. |
| Copper: | | | |
| Ore and concentrate | 90 | NA | NA. |
| Matte and speiss including cement copper | 1,794 | 2 | Belgium-Luxembourg 1,787. |
| Metal including alloys: | | | |
| Scrap | 46,468 | 267 | Germany 21,774; France 3,779; Sweden 3,518. |
| Unwrought | 19,017 | 68 | United Kingdom 4,832; France 3,133; Spain 2,876. |
| Semimanufactures | 220,125 | 2,103 | Germany 48,254; France 33,098; Spain 26,262. |
| Gold: | | | |
| Waste and sweepings | value, thousands | \$167 | -- Switzerland \$144; Germany \$17. |
| Metal including alloys, unwrought and partly wrought | kilograms | 27,432 | 1,405 Austria 16,145; United Kingdom 3,312; Switzerland 2,485. |
| Iron and steel, metal: | | | |
| Iron ore and concentrate: | | | |
| Excluding roasted pyrite | 231 | -- | Ecuador 200; Spain 25; Greece 5. |
| Pyrite, roasted | 18,957 | -- | France 14,806; Slovenia 4,012; Malta 44. |
| Pig iron, cast iron, related materials | 23,725 | 756 | Germany 4,907; Turkey 2,791; Belgium-Luxembourg 2,683. |
| Ferroalloys: | | | |
| Ferrochromium | 2,005 | -- | Germany 851; Slovenia 640; France 208. |
| Ferromanganese | 7,256 | 5,113 | Canada 1,073; Germany 492; Hungary 200. |
| Ferronickel | 2 | -- | All to India. |
| Ferrosilicochromium | 7 | -- | France 6; Germany 1. |
| Ferrosilicomanganese | 2,881 | -- | Austria 2,384; Croatia 352; Slovenia 50. |
| Ferrosilicon | 7,956 | 3,891 | Germany 1,647; France 1,610. |
| Silicon metal | 2,850 | 228 | Germany 1,955; Japan 170. |
| Unspecified | 733 | -- | Tunisia 248; Slovenia 168; Slovakia 72. |
| Steel, primary forms | 656,996 | 43,528 | India 104,926; Morocco 99,311; Republic of Korea 77,404. |
| Semimanufactures: | | | |
| Flat-rolled products: | | | |
| Of iron or nonalloy steel: | | | |
| Not clad, plated, coated | thousand tons | 2,611 | 271 France 478; Spain 220; Greece 178. |
| Clad, plated, coated | | 779,523 | 58,892 France 149,414; Turkey 65,443; Germany 63,360. |
| Of alloy steel | | 500,913 | 83,669 Germany 58,198; Spain 41,029; France 40,872. |
| Bars, rods, angles, shapes, sections | thousand tons | 3,714 | 36 Germany 1,030; France 608; Greece 376. |
| Rails and accessories | | 27,189 | 61 Finland 14,276; Turkey 2,279; Portugal 2,218. |
| Wire | | 321,578 | 8 France 84,335; Germany 41,385; Austria 38,252. |
| Tubes, pipes, fittings | thousand tons | 2,204 | 74 Germany 474; France 356; Spain 117. |
| Lead: | | | |
| Ore and concentrate | 11,856 | -- | Morocco 6,005; Serbia and Montenegro 4,000; Austria 1,851. |
| Oxides | 5,444 | -- | Poland 1,109; Thailand 1,020; India 660. |
| Metal including alloys: | | | |
| Scrap | 2,268 | -- | France 2,219; Belgium-Luxembourg 48. |
| Unwrought | 15,894 | -- | Austria 6,031; Turkey 3,495; Netherlands 2,003. |
| Semimanufactures | 745 | (2/) | France 551; Croatia 27; Spain 22. |

See footnotes at end of table.

TABLE 4--Continued
ITALY: EXPORTS OF SELECTED MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

| Commodity | Total | Destinations | |
|--|----------|---------------|--|
| | | United States | Other (principal) |
| METALS--Continued | | | |
| Magnesium, metal including alloys: | | | |
| Scrap | 388 | 22 | Norway 250; Belgium-Luxembourg 35; Germany 34. |
| Unwrought | 767 | -- | Belgium-Luxembourg 230; Germany 204; United Kingdom 184. |
| Semimanufactures | 1,541 | -- | Belgium-Luxembourg 511; Netherlands 255; Germany 188. |
| Manganese: | | | |
| Ore and concentrate, metallurgical-grade | 3,109 | 1,917 | France 94; Spain 25. |
| Metal including alloys, all forms | 506 | 43 | Germany 409; Sweden 20; Belgium-Luxembourg 11. |
| Nickel: | | | |
| Matte and speiss value, thousands | \$2 | \$2 | |
| Oxides and hydroxides | 329 | (3/) | Spain 328. |
| Metal including alloys: | | | |
| Scrap | 617 | 53 | Germany 324; United Kingdom 154; Belgium-Luxembourg 52. |
| Unwrought | 4,753 | 101 | Ireland 2,463; United Kingdom 1,374; Belgium-Luxembourg 461. |
| Semimanufactures | 4,602 | 52 | France 3,545; Hong Kong 176; Spain 122. |
| Platinum-group metals including alloys, unwrought and partly wrought value, thousands | \$26,642 | \$2,522 | United Kingdom \$12,553; Germany \$2,806; Switzerland \$2,140. |
| Silver, metal including alloys, unwrought and partly wrought do. | \$61,889 | \$483 | Spain \$19,613; Germany \$13,385; United Kingdom \$5,681. |
| Tin: | | | |
| Ore and concentrate | 3 | -- | All to United Kingdom. |
| Metal including alloys: | | | |
| Scrap | 164 | -- | United Arab Emirates 87; Belgium-Luxembourg 61. |
| Unwrought | 2,594 | 1 | Ireland 2,440; France 43; Switzerland 32. |
| Semimanufactures | 232 | (2/) | Czech Republic 49; Egypt 28. |
| Titanium: | | | |
| Ore and concentrate | 850 | -- | All to United Kingdom. |
| Oxides | 15,915 | 30 | Canada 8,038; Japan 3,551; United Kingdom 1,508. |
| Metal including alloys: | | | |
| Scrap and unwrought | 1,497 | 1,344 | United Kingdom 92; Germany 43; Belgium-Luxembourg 7. |
| Semimanufactures | 3,037 | 121 | Germany 406; United Kingdom 323; Norway 190. |
| Zinc: | | | |
| Ore and concentrate | 2,474 | -- | Bulgaria 2,040; Tunisia 273. |
| Oxides | 12,808 | -- | Spain 5,612; France 1,863; Germany 1,626. |
| Blue powder | 1,079 | -- | France 856; Turkey 25. |
| Metal including alloys: | | | |
| Scrap | 8,773 | (2/) | Hong Kong 2,999; France 1,179; Germany 466. |
| Unwrought | 53,722 | 6,001 | Netherlands 12,310; Turkey 8,053; Austria 5,190. |
| Semimanufactures | 1,351 | 17 | Germany 845; Slovenia 73; Croatia 54. |
| Zirconium: | | | |
| Ore and concentrate | 19,435 | -- | Turkey 6,976; Hungary 2,169; Hong Kong 1,260. |
| Metal including alloys: | | | |
| Scrap and unwrought | 822 | -- | China 336; Thailand 120; Brazil 103. |
| Semimanufactures | 604 | (2/) | China 315; Iran 70; Hong Kong 63. |
| INDUSTRIAL MINERALS | | | |
| Abrasives, n.e.s.: | | | |
| Natural, corundum, emery, pumice, etc. | 50,954 | 902 | Germany 21,683; United Kingdom 18,037; Hong Kong 1,163. |
| Artificial, corundum | 23,191 | 1,668 | Austria 5,410; Germany 4,204; France 3,581. |
| Dust and powder of precious and semiprecious stones including diamond value, thousands | \$7,314 | \$160 | Germany \$4,403; Hong Kong \$534; Ireland \$372. |
| Grinding and polishing wheels and stones | 42,811 | 583 | France 3,710; Saudi Arabia 2,724; Spain 2,642. |
| Cement thousand tons | 1,651 | 230 | Austria 300; Malta 220; Albania 176. |
| Clays, crude: | | | |
| Bentonite | 172,627 | 12 | Germany 52,579; France 44,858; Spain 33,309. |
| Kaolin | 30,811 | 85 | France 22,459; Austria 3,003; Syria 459. |
| Unspecified | 18,857 | -- | Germany 5,613; Slovenia 1,914; France 1,913. |
| Diamond, natural: | | | |
| Gem, not set or strung value, thousands | \$8,240 | \$1,066 | Belgium-Luxembourg \$3,104; United Kingdom \$2,562; Switzerland \$330. |
| Industrial stones do. | \$652 | \$17 | Hong Kong \$471; Belgium-Luxembourg \$84; France \$41. |

See footnotes at end of table.

TABLE 4--Continued
ITALY: EXPORTS OF SELECTED MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

| Commodity | Total | Destinations | |
|--|------------------------|---------------|--|
| | | United States | Other (principal) |
| INDUSTRIAL MINERALS--Continued | | | |
| Feldspar | 37,349 | -- | Germany 14,876; Spain 7,720; France 1,654. |
| Fertilizer materials: | | | |
| Crude, n.e.s. | 35,252 | 2 | France 18,943; Spain 4,970; United Arab Emirates 3,704. |
| Manufactured: | | | |
| Ammonia | 551 | -- | Slovenia 322; France 47; Singapore 47. |
| Nitrogenous | 361,914 | 119 | Greece 65,018; Spain 50,990; Thailand 36,240. |
| Phosphatic | 3,151 | -- | Spain 2,827; Croatia 196; Greece 48. |
| Potassic | 1,170 | -- | Somalia 500; Tunisia 148; France 118. |
| Unspecified and mixed | 28,158 | 54 | France 5,726; Kenya 4,852; Spain 3,446. |
| Fluorspar | 2,114 | -- | Malta 1,700; Switzerland 194; Turkey 130. |
| Gypsum and plaster | 89,799 | 1 | Slovenia 43,385; Switzerland 24,918; Austria 14,166. |
| Magnesium compounds: | | | |
| Magnesite, crude | 4,836 | 126 | Indonesia 1,237; Netherlands 1,065; Canada 271. |
| Oxides and hydroxides | 71,531 | 2,613 | Germany 19,298; India 14,700; South Africa 11,225. |
| Phosphates, crude | 1,644 | (2/) | Slovenia 1,033; Croatia 504; Spain 74. |
| Pigments, mineral, iron oxides and hydroxides, processed | 18,621 | 670 | Germany 4,352; United Kingdom 2,861; Spain 1,503. |
| Stone, sand and gravel: | | | |
| Dimension stone: | | | |
| Crude and partly worked | 809,676 | 17,361 | Lebanon 153,357; Germany 70,539; Egypt 65,232. |
| Worked | thousand tons 2,638 | 233 | Germany 668; Saudi Arabia 220; Hong Kong 191. |
| Dolomite, chiefly refractory-grade | 64,291 | 235 | France 39,637; Germany 6,706; Venezuela 5,509. |
| Gravel and crushed rock | thousand tons 1,171 | 1 | Germany 216; Switzerland 209; Belgium-Luxembourg 150. |
| Limestone other than dimension | 109 | -- | Japan 54; Egypt 37; Turkey 10. |
| Quartz and quartzite | 15,061 | 1 | France 6,472; Germany 1,895; Switzerland 685. |
| Sand other than metal-bearing | 79,624 | (2/) | Switzerland 63,317; France 3,783; Croatia 3,265. |
| Sulfur: | | | |
| Elemental: | | | |
| Crude including native and byproduct | 64,883 | -- | United Kingdom 20,045; Croatia 15,963; Lebanon 13,945. |
| Colloidal, precipitated, sublimed | 309 | -- | Croatia 226; Lebanon 40; Israel 15. |
| Dioxide | 8,288 | 1 | Austria 3,782; Spain 2,016; France 1,571. |
| Sulfuric acid | 140,553 | 41 | Lebanon 61,673; Spain 43,848; Greece 17,437. |
| Talc, steatite, soapstone, pyrophyllite | 68,246 | 145 | Germany 37,372; Austria 8,057; United Kingdom 2,866. |
| Vermiculite, perlite, etc. | 40,957 | -- | United Kingdom 22,465; France 15,691; Greece 2,002. |
| MINERAL FUELS AND RELATED MATERIALS | | | |
| Asphalt and bitumen, natural | 3,387 | -- | France 500; Germany 419; Switzerland 387. |
| Carbon black | 63,943 | 6 | Turkey 19,751; France 16,653; Germany 10,586. |
| Coal: | | | |
| Anthracite | 2,416 | -- | France 1,246; Venezuela 525; Spain 394. |
| Bituminous | 1,590 | -- | Lebanon 1,575; Malta 15. |
| Coke and semicoke | 88,806 | -- | France 39,426; Austria 9,131; Morocco 8,972. |
| Peat including briquets and litter | 1,731 | -- | Slovenia 805; Switzerland 742; Germany 55. |
| Petroleum: | | | |
| Crude | 317,706 | -- | Germany 272,154; Spain 45,551. |
| Refinery products: | | | |
| Liquefied petroleum gas | 130,695 | -- | Tunisia 55,859; Morocco 40,966; Lebanon 14,292. |
| Gasoline, motor | thousand tons 3,393 | 221 | Libya 661; Spain 364; Lebanon 312. |
| Mineral jelly and wax | 17,042 | 99 | Netherlands 6,358; Germany 5,409; Slovenia 2,250. |
| Kerosene and jet fuel | 815,205 | 70,209 | Tunisia 144,599; Malta 112,269; Brazil 54,167. |
| Distillate fuel oil | thousand tons 7,137 | 1 | Brazil 954; Spain 863; Switzerland 765. |
| Lubricants | 781,611 | 20,246 | United Kingdom 232,172; United Arab Emirates 68,848; Syria 60,969. |
| Residual fuel oil | thousand tons 3,741 | 150 | Romania 1,427; Malta 575; Tunisia 471. |
| Bitumen and other residues | 191,844 | -- | Tunisia 43,046; Austria 36,393; Switzerland 26,555. |
| Bituminous mixtures | 4,186 | 20 | Poland 763; Ukraine 423; Croatia 375. |
| Petroleum coke | 45,741 | -- | France 20,198; Slovenia 18,729; Greece 5,300. |

NA Not available.

1/ Table prepared by Virginia A. Woodson.

2/ Unreported quantity valued at less than \$10,000.

3/ Unreported quantity valued at \$33,000.

Source: United Nations Statistical Office (microfiche).

TABLE 5
ITALY: IMPORTS OF SELECTED MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

| Commodity | Total | Sources | |
|--|------------------|---------------|--|
| | | United States | Other (principal) |
| METALS | | | |
| Aluminum: | | | |
| Ore and concentrate | thousand tons | 2,079 | (2/) Australia 1,096; Guinea 906. |
| Oxides and hydroxides | | 310,400 | 1,375 France 89,689; Greece 62,504; Germany 60,694. |
| Metal including alloys: | | | |
| Scrap | | 266,187 | 405 Germany 117,755; France 47,635; Switzerland 38,684. |
| Unwrought | | 484,899 | 21 Netherlands 105,518; France 75,878; Germany 36,443. |
| Semimanufactures | | 352,790 | 6,538 United Kingdom 47,917; France 39,572; Spain 35,954. |
| Beryllium, metal including alloys, all forms | | 1 | 1 |
| Cadmium, metal including alloys, all forms | | 51 | -- Finland 26; United Kingdom 12; Belgium-Luxembourg 11. |
| Chromium: | | | |
| Ore and concentrate | | 123,272 | -- South Africa 65,407; Albania 26,237; Zimbabwe 7,116. |
| Oxides and hydroxides | | 3,219 | 40 Germany 1,274; United Kingdom 846; Poland 479. |
| Metal including alloys, all forms | | 419 | 1 Netherlands 128; France 100; United Kingdom 95. |
| Cobalt: | | | |
| Oxides and hydroxides | | 669 | -- Finland 252; Belgium-Luxembourg 229; Netherlands 98. |
| Metal including alloys, all forms | | 682 | 11 Belgium-Luxembourg 213; France 137; Russia 85. |
| Copper: | | | |
| Ore and concentrate | | 13 | -- Austria 10; other 3. |
| Matte and speiss including cement copper | | 5 | -- Mainly from Netherlands. |
| Metal including alloys: | | | |
| Scrap | | 228,079 | 1,409 Germany 90,480; France 47,629; United Kingdom 19,163. |
| Unwrought | | 489,828 | 960 Chile 146,351; Peru 43,588; Germany 41,955. |
| Semimanufactures | | 286,336 | 1,999 Germany 87,850; France 71,876; Spain 35,781. |
| Gold: | | | |
| Waste and sweepings | value, thousands | \$995 | -- Switzerland \$931; Spain \$47. |
| Metal including alloys, unwrought and partly wrought | kilograms | 331,746 | 15,544 South Africa 129,776; Switzerland 121,707; Canada 16,327. |
| Iron and steel, metal: | | | |
| Iron ore and concentrate: | | | |
| Excluding roasted pyrite | thousand tons | 16,048 | 41 Brazil 8,104; Mauritania 3,070; Australia 1,274. |
| Pyrite, roasted | | 20 | 20 |
| Scrap | thousand tons | 4,935 | 2 Germany 1,830; France 962; Austria 416. |
| Pig iron, cast iron, related materials | do. | 1,472 | 1 Russia 678; Algeria 259; Ukraine 207. |
| Ferroalloys: | | | |
| Ferrochromium | | 184,552 | 9 South Africa 77,187; Zimbabwe 28,627; Finland 24,070. |
| Ferromanganese | | 55,184 | 20,480 France 14,270; Norway 8,841; Spain 5,473. |
| Ferronicel | | 37,602 | -- France 17,429; Greece 8,560; Netherlands 6,681. |
| Ferrosilicochromium | | 293 | -- All from Germany. |
| Ferrosilicomanganese | | 70,452 | -- Norway 25,566; China 15,349; Spain 8,586. |
| Ferrosilicon | | 100,594 | 10 Norway 48,848; Slovakia 16,082; France 9,556. |
| Silicon metal | | 19,889 | -- France 7,070; Netherlands 2,616; Ukraine 1,924. |
| Unspecified | | 23,803 | 383 Germany 5,665; United Kingdom 4,237; France 3,842. |
| Steel, primary forms | thousand tons | 1,155 | (2/) Russia 308; Ukraine 172; Germany 170. |
| Semimanufactures: | | | |
| Flat-rolled products: | | | |
| Of iron or nonalloy steel: | | | |
| Not clad, plated, coated | thousand tons | 5,630 | 144 France 1,170; Germany 662; Belgium-Luxembourg 538. |
| Clad, plated, coated | do. | 1,399 | 95 France 296; Belgium-Luxembourg 234; Germany 220. |
| Of alloy steel | do. | 861 | 1 Germany 189; France 165; Belgium-Luxembourg 133. |
| Bars, rods, angles, shapes, sections | do. | 1,297 | 1 Germany 285; France 265; United Kingdom 200. |
| Rails and accessories | | 26,130 | 66 Netherlands 6,399; France 6,040; Belgium-Luxembourg 3,369. |
| Wire | | 114,130 | 48 Belgium-Luxembourg 28,284; Russia 24,478; France 9,032. |
| Tubes, pipes, fittings | | 666,346 | 26,528 Germany 120,178; France 85,446; Russia 76,162. |
| Lead: | | | |
| Ore and concentrate | | 104,483 | 10,131 Canada 24,022; Spain 17,315; Ireland 16,393. |
| Oxides | | 858 | 2 Netherlands 319; United Kingdom 245; Germany 146. |
| Metal including alloys: | | | |
| Scrap | | 8,449 | -- United Kingdom 2,331; Tunisia 2,074; Switzerland 1,383. |
| Unwrought | | 104,126 | 100 France 20,581; Bulgaria 16,490; Peru 14,717. |
| Semimanufactures | | 4,623 | (3/) Belgium-Luxembourg 2,698; Germany 1,048. |

See footnotes at end of table.

TABLE 5--Continued
ITALY: IMPORTS OF SELECTED MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

| Commodity | Total | Sources | |
|---|------------------|---------------|---|
| | | United States | Other (principal) |
| METALS--Continued | | | |
| Magnesium, metal including alloys: | | | |
| Scrap | 390 | (3/) | Germany 321; Croatia 31; Austria 24. |
| Unwrought | 6,975 | (3/) | Netherlands 1,723; Serbia and Montenegro 1,375; China 671. |
| Semimanufactures | 893 | 3 | France 470; Netherlands 194; Spain 97. |
| Manganese: | | | |
| Ore and concentrate, metallurgical-grade | 201,200 | -- | Gabon 139,541; South Africa 33,862; France 16,000. |
| Oxides | 2,065 | 72 | Belgium-Luxembourg 883; Germany 356; India 336. |
| Metal including alloys, all forms | 3,445 | 16 | China 1,192; Germany 604; Netherlands 571. |
| Nickel: | | | |
| Ore and concentrate | 22 | -- | All from Netherlands. |
| Matte and speiss | 3 | -- | All from Germany. |
| Oxides and hydroxides | 3,019 | -- | Netherlands 1,494; Cuba 1,461. |
| Metal including alloys: | | | |
| Scrap | 70 | 2 | Azerbaijan 35; United Arab Emirates 16; Germany 6. |
| Unwrought | 32,089 | 86 | Russia 9,498; Netherlands 3,720; Norway 2,879. |
| Semimanufactures | 4,251 | 638 | Germany 1,306; United Kingdom 1,045; France 504. |
| Platinum-group metals: | | | |
| Waste and sweepings | value, thousands | 4,229 | -- |
| Metals including alloys, unwrought and partly wrought | do. | \$207,189 | \$10,915 |
| | | | Russia \$109,590; United Kingdom \$39,957; Belgium-Luxembourg \$13,995. |
| Silver: | | | |
| Ore and concentrate | kilograms | 26,845 | -- |
| Metal including alloys, unwrought and partly wrought | value, thousands | \$155,220 | \$2,877 |
| | | | Germany \$63,901; Switzerland \$40,283; France \$7,906. |
| Tin: | | | |
| Ore and concentrate | 37 | -- | Netherlands 25; United Kingdom 12. |
| Metal including alloys: | | | |
| Scrap | 120 | -- | Germany 118; Netherlands 2. |
| Unwrought | 6,576 | -- | Malaysia 1,677; Ireland 1,472; Belgium-Luxembourg 1,186. |
| Semimanufactures | 1,373 | 5 | France 624; Germany 380; United Kingdom 186. |
| Titanium, metal including alloys: | | | |
| Scrap and unwrought | 4,005 | 904 | Russia 1,718; Germany 907. |
| Semimanufactures | 1,840 | 309 | Russia 362; Germany 289; United Kingdom 171. |
| Vanadium, metal including alloys, all forms | 20 | -- | All from Germany. |
| Zinc: | | | |
| Ore and concentrate | 518,844 | 18,183 | Canada 95,769; Australia 78,322; Peru 52,549. |
| Oxides | 17,241 | 39 | France 2,260; Germany 1,926; Portugal 1,344. |
| Blue powder | 9,091 | 18 | Netherlands 3,281; Germany 1,955; Belgium-Luxembourg 1,185. |
| Metal including alloys: | | | |
| Scrap | 21,825 | -- | Germany 10,221; France 8,073; Switzerland 1,199. |
| Unwrought | 129,374 | -- | Belgium-Luxembourg 23,117; Poland 22,240; Germany 16,704. |
| Semimanufactures | 6,734 | 39 | France 2,580; Germany 2,447; Belgium-Luxembourg 941. |
| Zirconium: | | | |
| Ore and concentrate | 115,945 | 349 | Australia 59,750; South Africa 45,077; Ukraine 3,720. |
| Metal including alloys: | | | |
| Scrap and unwrought | 223 | 25 | United Kingdom 82; Belgium-Luxembourg 44; Germany 38. |
| Semimanufactures | 6 | 1 | Belgium-Luxembourg 1; Germany 1; United Kingdom 1. |
| INDUSTRIAL MINERALS | | | |
| Abrasives, n.e.s.: | | | |
| Natural: Corundum, emery, pumice, etc. | 29,001 | 49 | Turkey 16,013; Greece 8,960. |
| Artificial, corundum | 31,030 | 178 | Ukraine 6,708; Austria 6,301; France 3,774. |
| Dust and powder of precious and semiprecious stones including diamond | value, thousands | \$72,932 | \$4,574 |
| | | | Switzerland \$45,115; Germany \$11,109; Belgium-Luxembourg \$5,892. |
| Grinding and polishing wheels and stones | 7,451 | 38 | Germany 1,256; Austria 1,230; Czech Republic 1,136. |
| Cement | thousand tons | 1,304 | (2/) |
| | | | Greece 672; France 204; Croatia 199. |
| Clays, crude: | | | |
| Bentonite | 57,941 | 137 | Greece 21,453; Morocco 12,600; Turkey 6,568. |
| Kaolin | 868,006 | 142,933 | United Kingdom 243,370; Germany 145,640; France 85,846. |
| Unspecified | thousand tons | 2,433 | 9 |
| | | | Germany 1,350; Ukraine 500; France 348. |

See footnotes at end of table.

TABLE 5--Continued
ITALY: IMPORTS OF SELECTED MINERAL COMMODITIES IN 1996 1/

(Metric tons unless otherwise specified)

| Commodity | Total | Sources | | |
|--|------------------|---------------|-------------------|--|
| | | United States | Other (principal) | |
| INDUSTRIAL MINERALS--Continued | | | | |
| Diamond, natural: | | | | |
| Gem, not set or strung | value, thousands | \$256,893 | 5,070 | Belgium-Luxembourg \$150,482; Switzerland \$36,166; Israel \$35,119. |
| Industrial stones | do. | \$5,141 | \$6 | Belgium-Luxembourg \$4,271; Germany \$249. |
| Feldspar | | 602,980 | 2,048 | Turkey 491,040; Canada 39,720; Greece 27,788. |
| Fertilizer materials: | | | | |
| Crude, n.e.s. | | 27,170 | 11 | France 10,783; Spain 9,242; Germany 1,989. |
| Manufactured: | | | | |
| Ammonia | | 342,561 | 25 | Russia 115,603; Ukraine 75,689; Algeria 36,199. |
| Nitrogenous | | 992,049 | 270 | Germany 175,571; Austria 158,407; Bulgaria 134,756. |
| Phosphatic | | 271,183 | -- | Tunisia 67,805; Morocco 58,638; Lebanon 47,307. |
| Potassic | | 519,879 | 27,640 | Israel 134,743; Germany 109,539; Jordan 90,390. |
| Unspecified and mixed | thousand tons | 1,226 | 5 | Tunisia 299; Morocco 164; Belgium-Luxembourg 141. |
| Fluorspar | | 95,823 | -- | China 36,910; Mexico 27,546; Kenya 14,928. |
| Graphite, natural | | 10,029 | 330 | Germany 1,748; Austria 1,528; Canada 1,294. |
| Gypsum and plaster | | 24,628 | 2,796 | Germany 10,753; France 8,834. |
| Magnesium compounds: | | | | |
| Magnesite, crude | | 27,136 | 9 | Greece 12,870; Turkey 8,759; China 3,699. |
| Oxides and hydroxides | | 103,752 | 369 | China 22,635; Greece 21,320; Austria 16,563. |
| Phosphates, crude | | 231,733 | -- | Morocco 181,979; Syria 40,440. |
| Pigments, mineral, iron oxides and hydroxides, processed | | 26,695 | 204 | Germany 11,366; Slovakia 5,234; Spain 3,380. |
| Stone, sand and gravel: | | | | |
| Dimension stone: | | | | |
| Crude and partly worked | thousand tons | 1,837 | 50 | India 465; Brazil 332; Spain 228. |
| Worked | | 117,050 | 268 | Argentina 28,905; Portugal 16,377; Spain 15,359. |
| Dolomite, chiefly refractory-grade | | 3,681 | -- | Germany 2,182; Netherlands 867. |
| Gravel and crushed rock | | 853,931 | 9 | Croatia 744,402; France 80,343. |
| Limestone other than dimension | | 93,056 | -- | Croatia 51,386; Slovenia 37,456. |
| Quartz and quartzite | | 110,043 | 110 | Spain 50,012; Switzerland 36,732; Turkey 9,945. |
| Sand other than metal-bearing | thousand tons | 1,373 | 2 | France 707; Spain 164; Egypt 149. |
| Sulfur: | | | | |
| Elemental: | | | | |
| Crude including native and byproduct | | 191,228 | -- | Poland 75,510; Germany 28,541; France 23,218. |
| Colloidal, precipitated, sublimed | | 915 | 11 | United Kingdom 840; Germany 42. |
| Dioxide | | 88 | -- | Poland 72; Greece 16. |
| Sulfuric acid | | 51,708 | 53 | Spain 26,686; Switzerland 6,892; Slovenia 6,475. |
| Talc, steatite, soapstone, pyrophyllite | | 85,744 | 92 | China 29,583; France 26,158; Austria 14,615. |
| Vermiculite, perlite, etc. | | 64,850 | -- | Turkey 45,290; Greece 11,027; South Africa 7,805. |
| MINERAL FUELS AND RELATED MATERIALS | | | | |
| Asphalt and bitumen, natural | | 698 | 498 | Germany 94; France 28. |
| Carbon black | | 48,779 | 1,837 | Croatia 10,678; France 9,370; Russia 6,027. |
| Coal: | | | | |
| Anthracite | | 391,852 | 86,531 | Russia 103,094; South Africa 92,403; China 60,500. |
| Bituminous | thousand tons | 13,239 | 6,041 | South Africa 2,711; Australia 2,407; Canada 1,205. |
| Coke and semicoke | | 551,769 | 5 | China 297,151; Romania 83,805; Netherlands 43,056. |
| Peat including briquets and litter | | 399,808 | 857 | Germany 228,219; Netherlands 55,108; Lithuania 38,045. |
| Petroleum: | | | | |
| Crude | thousand tons | 74,542 | -- | Libya 24,302; Iran 11,965; Saudi Arabia 9,894. |
| Refinery products: | | | | |
| Liquefied petroleum gas | do. | 1,771 | (2/) | Algeria 893; Saudi Arabia 245; France 242. |
| Gasoline, motor | do. | 3,289 | 9 | Libya 793; France 728; Belgium-Luxembourg 438. |
| Mineral jelly and wax | | 45,662 | 1,810 | Belgium-Luxembourg 10,322; France 6,440; Germany 5,741. |
| Kerosene and jet fuel | | 43,781 | 33 | France 19,937; Bahrain 14,914; Belgium-Luxembourg 4,047. |
| Distillate fuel oil | thousand tons | 1,814 | 22 | Russia 936; Algeria 430; Libya 84. |
| Lubricants | | 134,888 | 8 | France 27,895; Germany 20,989; Spain 10,307. |
| Bitumen and other residues | | 206,907 | 126,067 | Spain 62,281; France 17,366. |
| Bituminous mixtures | | 2,778 | 41 | France 758; Austria 712; United Kingdom 584. |
| Petroleum coke | thousand tons | 2,352 | 1,799 | Venezuela 228; Aruba 101. |

1/ Table prepared by Virginia A. Woodson.

2/ Less than 1/2 unit.

3/ Unreported quantity valued at less than \$10,000.

Source: United Nations Statistical Office (microfiche).